

## **REMARKS**

### **Status of Claims**

Claims 71-74, 76-111, 114-117, 119-144 and 147-430 were pending. Of these, claims 108, 155-159, 223 and 241 were withdrawn from consideration. In this amendment claims 93-96, 99, 101, 103, 104, 106-109, 147-166, 209-211, 214, 218, 219, 221-224, 227-243, 278, 279, 295, 334, 399, 400, 429 and 430 are cancelled. The cancellation of the claims is without disclaimer or prejudice to future prosecution in this or a related application. New claims 431-435 are added in this amendment. Upon entry of this amendment the following claims will be pending: claims 71-74, 76-92, 97-98, 100, 102, 105, 110-111, 114-117, 119-144; 167-208, 212-213, 215, 217, 220, 225, 226, 244-277; 280-294, 296-333, 335-398, 401-403, 406-428, and 431-435.

### **Double Patenting**

Claims 71-74, 76-107, 109-111, 114-117, 119-144, 147-154, 160-222, 224-232, 234-240, and 242-430 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims of U.S. Pat. No. 6,576,428. This rejection is overcome by a Terminal Disclaimer submitted herewith. The disclaimer is filed to expedite prosecution and does not indicate acquiescence to the position of the Office.

### **Rejections Under 35 U.S.C. 102(b)**

Claims 93-96, 101, 104, 106, 107, 109, 147-149, 209-211, 216, 219, 221, 222, 224, 399, 400, 404 and 405 were rejected as allegedly anticipated by Kohler et al. This rejection is mooted by the cancellation of these claims. Cancellation of claims is intended to expedite allowance of claims to additional subject matter and does not indicate acquiescence to the position of the Office.

### **Rejections Under 35 U.S.C. 103(a)**

Claims 150, 151, 162, 165, 227, 230, 235, 238, and 334 were rejected as allegedly obvious in view of Kohler et al. and Zuk et al. This rejection is mooted by the cancellation of these claims. Cancellation of claims is intended to expedite allowance of claims to additional subject matter and does not indicate acquiescence to the position of the Office.

Claims 150-154, 160-165, 227-230, 232, 234-238, 240, 242, 243, 334, 429 and 430 and 334 were rejected as allegedly obvious in view of the combination of Klug et al. and Bell et al. and Zuk et al. This rejection is mooted by the cancellation of these claims. Cancellation of claims is intended to expedite allowance of claims to additional subject matter and does not indicate acquiescence to the position of the Office.

Claims 16, 231, and 239 were rejected as allegedly obvious in view of the combination of Klug et al., Bell et al., Zuk et al. and Segal et al. This rejection is mooted by the cancellation of these claims. Cancellation of claims is intended to expedite allowance of claims to additional subject matter and does not indicate acquiescence to the position of the Office.

#### **New and Amended Claims**

In view of the terminal disclaimer and cancellations of claims discussed above, Applicants believe the remaining claims (claims 71-74, 76-92, 97-98, 100, 102, 105, 110-111, 114-117, 119-144; 167-208, 212-213, 215, 217, 220, 225, 226, 244-277; 280-294, 296-333, 335-398, 401-403, 406-428, and 431-435) are in condition for allowance. Claims that were dependent from rejected claims cancelled in this amendment have been amended to no longer depend from such claims. That is, they are now independent or depend from other claims such that all of the elements of the bases claims are incorporated.

The claims have also been amended to correct obvious errors, provide proper antecedent basis and increase clarity without adding new matter. In several claims the term "includes" has been clarified to "is" (see e.g., claim 86) or "comprises" (see, e.g., claim 88). In some cases plural terms have been changed to singular form for clarity (see, e.g., claim 89; changing "modified dextran molecules" to "a modified dextran molecule").

New claim 431 finds support in claim 190, from which it depends. New claims 432-435 find support in previous claims 202, 86, 129, and 183 respectively.

It is believed that all of the claims are now in condition for allowance. *Should the Examiner have any comments or concerns the Examiner is urged to contact the undersigned so that any*

*claims can be discussed and any corrections, if needed, can be made by Examiner's Amendment.*

### **Claim Order**

In order to group similar claims together Applicants respectfully suggest that upon allowance the claims be renumbered so that they are in the following order: 190; 196-197; 201; 432; 202-208; 431; 191; 280-281; 192-195; 316-318; 198-200; 269; 388-390; 270; 391-393; 271; 248; 319-321; 335; 386-387; 397; 249; 322-324; 336; 250; 325-327; 385; 398; 251; 328-330; 252; 331-333; 253; 337-339; 71; 73; 76-79; 433; 86; 87; 90-92; 296-297; 272; 394-396; 273; 80-81; 85; 72; 74; 298-300; 274; 275; 82-84; 88; 89; 114; 116; 125-126; 123-124; 127-128; 434; 119-122; 129-144; 263; 367-369; 264; 370-372; 265; 373-375; 254; 340-342; 255; 343-345; 256; 346-348; 172; 174-179; 290; 435; 183-188; 310-312; 173; 180; 181; 182; 115; 117; 276-277; 301-303; 257; 349-351; 258; 352-354; 259; 355-357; 245-247; 167; 282; 304-306; 283; 284; 285; 266; 376-378; 267; 379-381; 268; 382-384; 260; 358-360; 261; 361-363; 262; 364-366; 189; 291-294; 313-315; 168-171, 244; 286-289; 307-309; 212; 213; 217; 220; 402; 417; 420; 408; 412; 423; 427; 97; 98; 100; 419; 407; 410; 411; 426; 422; 425; 414; 105; 401; 403; 416; 215; 415; 406; 409; 413; 418; 421; 424; 428; 225; 226; 110; 111.

For the convenience of the Office an Appendix showing the claims in the above order accompanies this response.

### **Interview**

Applicants thank the Examiner for the courtesy of a telephonic interview on February 3, 2005. The pending rejections and cited references were discussed.

Applicants wish to note an error in the Office's Interview Summary for the interview of September 8, 2004. At page 4 of the Summary it states that Applicant has submitted a supplemental IDS with "70+ references." The supplemental IDS referred to had one patent and six (6) non-patent references.

### CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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## APPENDIX

Claim 190 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is optionally labeled with a label moiety, and wherein said cells are not lysed during said method.

Claim 196 (previously presented) : The method of claim 190 wherein the capture moiety is an antibody or an antigen-binding fragment thereof.

Claim 197 (previously presented) : The method of claim 196 wherein the antibody or antigen binding fragment thereof is bispecific.

Claim 201 (previously presented) : The method of claim 197 wherein the bispecific antibody specifically binds to the cell.

Claim 432 (new): The method of claim 190 wherein the product is a protein.

Claim 202 (currently amended): The method of claim 190 wherein said product ~~includes cytokines, antibodies, hormones, enzymes or proteins~~ is a cytokine, antibody, hormone or enzyme.

Claim 203 (currently amended) : The method of claim 202 wherein the product is said cytokine ~~includes~~ IFN $\gamma$ , IL1, IL2, IL4, IL10, IL12, TGF $\beta$ , TNF, GMCSF, and SCF.

Claim 204 (currently amended) : The method of claim 200 wherein said linking moiety comprises a ~~includes~~ branched polymers polymer.

Claim 205 (currently amended) : The method of claim 204 wherein said branched polymer ~~polymers~~ ~~includes~~ comprises a modified dextran molecule ~~molecules~~, polyethylene glycol, polypropylene glycol, polyvinyl alcohol or polyvinylpyrrolidone.

Claim 206 (currently amended) : The method of claim 190 wherein said capture moiety is coupled to ~~cell comprises~~ a cell surface marker.

Claim 207 (currently amended) : The method of claim 206 wherein said cell surface marker ~~includes~~ is CD3, CD4, CD8, CD19, CD20, CD14, CD16, CD15, CD45, class I MHC and Class II MHC molecules, CD34, CD38, CD33, CD56 T cell receptor, Fc receptor,  $\beta$ 2 microglobulin or immunoglobulin.

Claim 208 (previously presented) : The method of claim 206 wherein said cell surface marker comprises a cell adhesion molecule.

Claim 431 (new) : The method of claim 190 wherein said product is labeled with a label moiety.

Claim 191 (previously presented) : The method of claim 190 wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 280 (previously presented) : The method of claim 191 wherein the anchoring moiety is a lipid anchor.

Claim 281 (previously presented) : The method of claim 191 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 192 (currently amended) : The method of claim ~~190~~ 431 wherein the label moiety is an antibody specific for the product.

Claim 193 (currently amended) : The method of claim ~~190~~ 431 wherein the label moiety is fluorochromated.

Claim 194 (currently amended) : The method of claim ~~190~~ 431 wherein the label moiety is magnetizable.

Claim 195 (previously presented) : The method of claim 194 wherein the label moiety comprises colloidal magnetic particles with a typical diameter of about 5 to 200 nm.

Claim 316 (currently amended) : The method of claim 431 ~~190~~ wherein the label moiety is an antibody specific for the product.

Claim 317 (previously presented) : The method of claim 316 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 318 (previously presented) : The method of claim 316 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 198 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lipid anchor.

Claim 199 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 200 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, and wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety.

Claim 269 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein

i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety, or

ii) said capture moiety is coupled to said cells through an anchoring moiety, and

A) the anchoring moiety is a lipid anchor or

B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 388 (previously presented) : The method of claim 269 wherein the label moiety is an antibody specific for the product.

Claim 389 (previously presented) : The method of claim 388 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 390 (previously presented) : The method of claim 388 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 270 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, and wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 391 (previously presented) : The method of claim 270 wherein the label moiety is an antibody specific for the product.

Claim 392 (previously presented) : The method of claim 391 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 393 (previously presented) : The method of claim 391 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 271 (previously presented) : A method to label cells with a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is optionally labeled with a label moiety, wherein said cells are not lysed during said method, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 248 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells wherein said capture moiety specifically binds the product, thereby labeling cells with



said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method,

and wherein

a) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

b) said capture moiety is coupled to said cells through an anchoring moiety, and

i) the anchoring moiety is a lipid anchor or

ii) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 319 (previously presented) : The method of claim 248 wherein the label moiety is an antibody specific for the product.

Claim 320 (previously presented) : The method of claim 319 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 321 (previously presented) : The method of claim 319 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 335 (previously presented) : The method of claim 248 wherein the product is a cytokine.

Claim 386 (previously presented) : The method of claim 319 wherein the product is a cytokine.

Claim 387 (previously presented) : The method of claim 320 wherein the product is a cytokine.

Claim 397 (previously presented) : The method of claim 321 wherein the product is a cytokine.

Claim 249 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method,

wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 322 (previously presented) : The method of claim 249 wherein the label moiety is an antibody specific for the product.

Claim 323 (previously presented) : The method of claim 322 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 324 (previously presented) : The method of claim 322 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 336 (previously presented) : The method of claim 249 wherein the product is a cytokine.

Claim 250 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method,

wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody to the cell.

Claim 325 (previously presented) : The method of claim 250 wherein the label moiety is an antibody specific for the product.

Claim 326 (previously presented) : The method of claim 325 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 327 (previously presented) : The method of claim 325 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 385 (previously presented) : The method of claim 250 wherein the product is a cytokine.

Claim 398 (previously presented) : The method of claim 325 wherein the product is a cytokine.

Claim 251 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising the steps of:

- a) coupling said cells to a capture moiety;
- b) culturing said cells under conditions wherein the product is secreted and bound to said capture moiety, thereby labeling cells with a product secreted by said cells; and
- c) labeling said product with a label moiety, wherein said cells are not lysed during said method, wherein

- i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or
- ii) said capture moiety is coupled to said cells through an anchoring moiety, and
  - A) the anchoring moiety is a lipid anchor or
  - B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 328 (previously presented) : The method of claim 251 wherein the label moiety is an antibody specific for the product.

Claim 329 (previously presented) : The method of claim 328 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 330 (previously presented) : The method of claim 328 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 252 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising the steps of:

- a) coupling said cells to a capture moiety;
- b) culturing said cells under conditions wherein the product is secreted and bound to said capture moiety, thereby labeling cells with a product secreted by said cells; and
- c) labeling said product with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 331 (previously presented) : The method of claim 252 wherein the label moiety is an antibody specific for the product.

Claim 332 (previously presented) : The method of claim 331 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 333 (previously presented) : The method of claim 331 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 253 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising the steps of:

- a) coupling said cells to a capture moiety;

b) culturing said cells under conditions wherein the product is secreted and bound to said capture moiety, thereby labeling cells with a product secreted by said cells; and

c) labeling said product with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 337 (previously presented) : The method of claim 253 wherein the label moiety is an antibody specific for the product.

Claim 338 (previously presented) : The method of claim 337 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 339 (previously presented) : The method of claim 337 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 71 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is labeled with a label moiety, and wherein said cells are not lysed during said method.

Claim 73 (previously presented) : The method of claim 71 wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 76 (previously presented) : The method of claim 71 wherein the label moiety is an antibody specific for the product.

Claim 77 (previously presented) : The method of claim 71 wherein the label moiety is fluorochromated.

Claim 78 (previously presented) : The method of claim 71 wherein the label moiety is magnetizable.

Claim 79 (previously presented) : The method of claim 78 wherein the label moiety comprises colloidal magnetic particles with a typical diameter of about 5 to 200 nm.

Claim 433 (new) : The method of claim 71 wherein said product is a protein.

Claim 86 ( currently amended) : The method of claim 71 wherein said product is a cytokine, antibody, hormone or enzyme ~~includes cytokines, antibodies, hormones, enzymes or proteins.~~

Claim 87 (currently amended) : The method of claim 86 wherein the product is said cytokine ~~includes~~ IFN $\gamma$ , IL1, IL2, IL4, IL10, IL12, TGF $\beta$ , TNF, GMCSF, and SCF.

Claim 90 (previously presented) : The method of claim 71 wherein said cell comprises a cell surface marker.

Claim 91 (previously presented) : The method of claim 90 wherein said cell surface marker includes CD3, CD4, CD8, CD19, CD20, CD14, CD16, CD15, CD45, class I MHC and Class II MHC molecules, CD34, CD38, CD33, CD56 T cell receptor, Fc receptor,  $\beta$ 2 microglobulin or immunoglobulin.

Claim 92 (previously presented) : The method of claim 90 wherein said cell surface marker comprises a cell adhesion molecule.

Claim 296 (currently amended) : The method of claim 76 ~~295~~ wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 297 (currently amended) : The method of claim 76 ~~295~~ wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 272 (previously presented) : The method of claim 73 wherein the anchoring moiety is a lipid anchor.

Claim 394 (previously presented) : The method of claim 272 wherein the label moiety is an antibody specific for the product.

Claim 395 (previously presented) : The method of claim 394 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 396 (previously presented) : The method of claim 394 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 273 (previously presented) : The method of claim 73 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 80 (previously presented) : The method of claim 71 wherein the capture moiety is an antibody or an antigen-binding fragment thereof.

Claim 81 (previously presented) : The method of claim 80 wherein the antibody or antigen binding fragment thereof is bispecific.

Claim 85 (previously presented) : The method of claim 81 wherein the bispecific antibody specifically binds to the cell.

Claim 72 (currently amended) : A method to positively identify cells based on a product secreted by the cells, comprising the steps of:

- a) coupling said cells to a capture moiety;
- b) culturing said cells under conditions wherein the product is secreted and bound to said capture moiety, thereby labeling cells with a product secreted by said cells; and
- c) labeling said product with a label moiety, and wherein said cells are not lysed during said method.

Claim 74 (previously presented) : The method of claim 72 wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 298 (previously presented) : The method of claim 72 wherein the label moiety is an antibody specific for the product.

Claim 299 (previously presented) : The method of claim 298 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 300 (previously presented) : The method of claim 298 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 274 (previously presented) : The method of claim 74 wherein the anchoring moiety is a lipid anchor.

Claim 275 (previously presented) : The method of claim 74 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 82 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lipid anchor.

Claim 83 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 84 (previously presented) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method, and wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety.

Claim 88 (currently amended) : The method of claim 84 wherein said linking moiety comprises a ~~includes~~ branched polymers polymer.

Claim 89 ( currently amended) : The method of claim 88 wherein said branched ~~polymers includes~~ polymer comprises a modified dextran molecules molecule, polyethylene glycol, polypropylene glycol, polyvinyl alcohol or polyvinylpyrrolidone.

Claim 114 (currently amended) : A method to positively identify cells based on a product secreted by the cells, comprising culturing said cells under conditions wherein the product is secreted and bound to a capture moiety coupled to said cells, wherein said capture moiety specifically binds the product, thereby labeling cells with said product, and wherein said product is labeled with a label moiety, wherein said cells are not lysed during said method further comprising the step of positively separating said cells labeled with said product ~~secreted by said cells, and wherein said product is labeled with a label moiety~~.

Claim 116 (previously presented) : The method of claim 114 wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 125 (previously presented) : The method of claim 116 wherein the anchoring moiety is a lipid anchor.

Claim 126 (previously presented) : The method of claim 116 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 123 (previously presented) : The method of claim 114 wherein the capture moiety is an antibody or an antigen-binding fragment thereof.

Claim 124 (previously presented) : The method of claim 123 wherein the antibody or antigen binding fragment thereof is bispecific.

Claim 127 (previously presented) : The method of claim 114 wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety.

Claim 128 (previously presented) : The method of claim 124 wherein the bispecific antibody specifically binds to the cell.

Claim 434 (new) : The method of claim 114 wherein said product is a protein.

Claim 119 (previously presented) : The method of claim 114 wherein the label moiety is an antibody specific for the product.

Claim 120 (previously presented) : The method of claim 114 wherein the label moiety is fluorochromated.

Claim 121 (previously presented) : The method of claim 114 wherein the label moiety is magnetizable.

Claim 122 (previously presented) : The method of claim 121 wherein the label moiety comprises colloidal magnetic particles with a typical diameter of about 5 to 200 nm.

Claim 129 (currently amended) : The method of claim 114 wherein said product ~~includes cytokines, antibodies, hormones, enzymes or proteins~~ is a cytokine, antibody, hormone or enzyme.



- Claim 130 (previously presented) : The method of claim 129 wherein said product is a cytokine.
- Claim 131 (previously presented) : The method of claim 129 wherein said product is an antibody.
- Claim 132 (currently amended) : The method of claim 130 wherein said cytokine is ~~includes~~ IFN $\gamma$ , IL1, IL2, IL4, IL10, IL12, TGF $\beta$ , TNF, GMCSF, or SCF.
- Claim 133 (previously presented) : The method of claim 132 wherein said cytokine is IFN $\gamma$ .
- Claim 134 (previously presented) : The method of claim 132 wherein said cytokine is IL2.
- Claim 135 (previously presented) : The method of claim 132 wherein said cytokine is IL4.
- Claim 136 (previously presented) : The method of claim 132 wherein said cytokine is IL10.
- Claim 137 (previously presented) : The method of claim 132 wherein said cytokine is IL12.
- Claim 138 (previously presented) : The method of claim 132 wherein said cytokine is TNF.
- Claim 139 (previously presented) : The method of claim 127 wherein said linking moiety includes branched polymers.
- Claim 140 (previously presented) : The method of claim 139 wherein said branched polymers includes modified dextran molecules, polyethylene glycol, polypropylene glycol, polyvinyl alcohol or polyvinylpyrrolidone.
- Claim 141 (currently amended) : The method of claim 114 wherein the capture moiety is bound to said cell comprises a cell surface marker.
- Claim 142 (currently amended) : The method of claim 141 wherein said cell surface marker is ~~includes~~ CD3, CD4, CD8, CD19, CD20, CD14, CD16, CD15, CD45, a class I MHC molecule, a and Class II MHC molecule ~~molecules~~, CD34, CD38, CD33, CD56 T cell receptor, Fc receptor,  $\beta$ 2 microglobulin or immunoglobulin.
- Claim 143 (previously presented) : The method of claim 141 wherein said surface marker is CD45.
- Claim 144 (previously presented) : The method of claim 141 wherein said cell surface marker comprises a cell adhesion molecule.

Claim 263 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells, wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein

i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

ii) said capture moiety is coupled to said cells through an anchoring moiety, and

A) the anchoring moiety is a lipid anchor or

B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 367 (previously presented) : The method of claim 263 wherein the label moiety is an antibody specific for the product.

Claim 368 (previously presented) : The method of claim 367 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 369 (previously presented) : The method of claim 367 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 264 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells and wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 370 (previously presented) : The method of claim 264 wherein the label moiety is an antibody specific for the product.

Claim 371 (previously presented) : The method of claim 370 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 372 (previously presented) : The method of claim 370 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 265 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells and wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 373 (previously presented) : The method of claim 265 wherein the label moiety is an antibody specific for the product.

Claim 374 (previously presented) : The method of claim 373 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 375 (previously presented) : The method of claim 373 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 254 (previously presented) : A method to positively separate cells based on a product secreted by the cells, comprising the steps of:

a) culturing cells coupled to a capture moiety under conditions wherein a product is secreted, wherein said product secreted by said cells specifically binds to said capture moiety, thereby producing cells labeled with said product wherein said cells are not lysed by said method, and wherein said product is labeled with a label moiety and wherein

i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

ii) said capture moiety is coupled to said cells through an anchoring moiety, and

A) the anchoring moiety is a lipid anchor or

B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof;

and

b) positively separating said cells labeled with said product.

Claim 340 (previously presented) : The method of claim 254 wherein the label moiety is an antibody specific for the product.

Claim 341 (previously presented) : The method of claim 340 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 342 (previously presented) : The method of claim 340 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 255 (previously presented) : A method to positively separate cells based on a product secreted by the cells, comprising the steps of:

a) culturing cells coupled to a capture moiety under conditions wherein a product is secreted, wherein said product secreted by said cells specifically binds to said capture moiety, thereby producing cells labeled with said product wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin; and

b) positively separating said cells labeled with said product.

Claim 343 (previously presented) : The method of claim 255 wherein the label moiety is an antibody specific for the product.

Claim 344 (previously presented) : The method of claim 343 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 345 (previously presented) : The method of claim 343 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 256 (previously presented) : A method to positively separate cells based on a product secreted by the cells, comprising the steps of:

a) culturing cells coupled to a capture moiety under conditions wherein a product is secreted, wherein said product secreted by said cells specifically binds to said capture moiety, thereby producing cells labeled with said product wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, wherein said capture moiety is antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell; and

b) positively separating said cells labeled with said product.

Claim 346 (previously presented) : The method of claim 256 wherein the label moiety is an antibody specific for the product.

Claim 347 (previously presented) : The method of claim 346 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 348 (previously presented) : The method of claim 346 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 172 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells and wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method and wherein said product is labeled with a label moiety.

Claim 174 (previously presented) : The method of claim 172 wherein the label moiety is an antibody specific for the product.

Claim 175 (previously presented) : The method of claim 172 wherein the label moiety is fluorochromated.

Claim 176 (previously presented) : The method of claim 172 wherein the label moiety is magnetizable.

Claim 177 (previously presented) : The method of claim 176 wherein the label moiety comprises colloidal magnetic particles with a typical diameter of about 5 to 200 nm.

Claim 178 (previously presented) : The method of claim 172 wherein the capture moiety is an antibody or an antigen-binding fragment thereof.

Claim 179 (previously presented) : The method of claim 178 wherein said antibody is against a cell surface antigen.

Claim 290 (previously presented) : The method of claim 179 wherein the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 435 (new) : The method of claim 172 wherein the product is a protein.

Claim 183 (currently amended) : The method of claim 172 wherein the product ~~includes cytokines, antibodies, hormones or proteins~~ is a cytokine, antibody, or hormone.

Claim 184 (previously presented) : The method of claim 172 wherein said product is an antibody.

Claim 185 (previously presented) : The method of claim 172 wherein said product is a cytokine.

Claim 186 (previously presented) : The method of claim 185 wherein said cytokine is interleukin.

Claim 187 (previously presented) : The method of claim 185 wherein said cytokine is IFN $\gamma$ .

Claim 188 (previously presented) : The method of claim 183 wherein said product is a growth hormone.

Claim 310 (previously presented) : The method of claim 172 wherein the label moiety is an antibody specific for the product.

Claim 311 (previously presented) : The method of claim 310 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 312 (previously presented) : The method of claim 310 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 173 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells and wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 180 (previously presented) : The method of claim 173 wherein the anchoring moiety is a lipid anchor.

Claim 181 (previously presented) : The method of claim 173 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 182 (previously presented) : A method to positively separate cells based on a product secreted by the cells comprising separating cells labeled with the product, wherein said cells have been coupled to a capture moiety that specifically binds a product secreted by said cells and wherein said cells have been cultured under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety.

Claim 115 (currently amended) : A method to positively separate cells based on a product secreted by the cells, comprising the steps of:

a) culturing cells coupled to a capture moiety under conditions wherein a product is secreted, wherein said product secreted by said cells specifically binds to said capture moiety, thereby producing cells labeled with said product, wherein said cells are not lysed by said method, and wherein said product is labeled with a label moiety; and

b) positively separating said cells labeled with said product.

Claim 117 (previously presented) : The method of claim 115 wherein said capture moiety is coupled to said cells through an anchoring moiety.

Claim 276 (previously presented) : The method of claim 117 wherein the anchoring moiety is a lipid anchor.

Claim 277 (previously presented) : The method of claim 117 wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 301 (previously presented) : The method of claim 115 wherein the label moiety is an antibody specific for the product.

Claim 302 (previously presented) : The method of claim 301 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 303 (previously presented) : The method of claim 301 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 257 (previously presented) : A method to determine the proportion of cells labeled with a product in a cell population, wherein the cells labeled with the product secrete said product, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety, wherein said product is labeled with a label moiety, and wherein

- i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or
- ii) said capture moiety is coupled to said cells through an anchoring moiety, and
  - A) the anchoring moiety is a lipid anchor or
  - B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof;

b) labeling the cells of step a) with at least one additional label moiety that does not label the product bound to said capture moiety; and

c) comparing the proportion of cells comprising secreted product bound to said capture moiety to the proportion of cells labeled with said label moiety, thereby determining the proportion of cells in the population that secretes the product; and

wherein said cells are not lysed by said method.

Claim 349 (previously presented) :      The method of claim 257 wherein the label moiety is an antibody specific for the product.

Claim 350 (previously presented) :      The method of claim 349 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 351 (previously presented) :      The method of claim 349 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 258 (previously presented) :      A method to determine the proportion of cells labeled with a product in a cell population, wherein the cells labeled with the product secrete said product, comprising the steps of:

- a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin;
- b) labeling the cells of step a) with at least one additional label moiety that does not label the product bound to said capture moiety; and
- c) comparing the proportion of cells comprising secreted product bound to said capture moiety to the proportion of cells labeled with said label moiety, thereby determining the proportion of cells in the population that secretes the product; and

wherein said cells are not lysed by said method.



Claim 352 (previously presented) : The method of claim 258 wherein the label moiety is an antibody specific for the product.

Claim 353 (previously presented) : The method of claim 352 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 354 (previously presented) : The method of claim 352 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 259 (previously presented) : A method to determine the proportion of cells labeled with a product in a cell population, wherein the cells labeled with the product secrete said product, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety, wherein said capture moiety wherein said capture moiety is antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell;

b) labeling the cells of step a) with at least one additional label moiety that does not label the product bound to said capture moiety; and

c) comparing the proportion of cells comprising secreted product bound to said capture moiety to the proportion of cells labeled with said label moiety, thereby determining the proportion of cells in the population that secretes the product; and

wherein said cells are not lysed by said method.

Claim 355 (previously presented) : The method of claim 259 wherein the label moiety is an antibody specific for the product.

Claim 356 (previously presented) : The method of claim 355 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 357 (previously presented) : The method of claim 355 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 245 (currently amended) : A method to determine the proportion of cells [,] in a cell population [,] that are labeled with a product, wherein the cells labeled with the product secrete the product, said method comprising:

a) culturing a cell population, wherein cells of said cell population are coupled to a capture moiety that specifically binds a product secreted by at least some cells in said cell population, under conditions wherein the product is secreted and bound to said capture moiety, thereby producing cells labeled with said product; and

b) determining the proportion of cells in said cell population that are labeled with said product; wherein said cells are not lysed by said method.

Claim 246 (currently amended) : The method of claim 245, further comprising the steps of:

c) labeling the cells of said cell population with the [a] second capture moiety that specifically binds a second product;

d) culturing said cell population under conditions wherein a second product is secreted and bound to said second capture moiety thereby producing cells labeled with said second product; and

e) determining the proportion of cells labeled with each product.

Claim 247 (previously presented) : The method of claim 246 further comprising the step of determining the amount and type of each product produced per cell labeled with product.

Claim 167 (previously presented) : A method to determine the proportion of cells labeled with a product in a cell population, wherein the cells labeled with the product secrete said product, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety;

b) labeling the cells of step a) with at least one additional label moiety that does not label the product bound to said capture moiety; and

c) comparing the proportion of cells comprising secreted product bound to said capture moiety to the proportion of cells labeled with said label moiety, thereby determining the proportion of cells in the population that secretes the product; and

wherein said cells are not lysed by said method.

Claim 282 (previously presented) : The method of claim 167 wherein the capture moiety is an antibody or antigen binding fragment thereof.

Claim 304 (previously presented) : The method of claim 167 wherein the label moiety is an antibody specific for the product.

Claim 305 (previously presented) : The method of claim 304 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 306 (previously presented) : The method of claim 304 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 283 (previously presented) : The method of claim 282 wherein the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 284 (previously presented) : The method of claim 167 wherein said capture moiety is coupled to said cells through an anchoring moiety, wherein said anchoring moiety is a lipid anchor.

Claim 285 (previously presented) : The method of claim 167 wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 266 (previously presented) : A method to determine the amount of product produced per cell in a population of cells, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein said cells are not lysed by said method, wherein said product is labeled with a label moiety, and wherein

i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

ii) said capture moiety is coupled to said cells through an anchoring moiety, and

A) the anchoring moiety is a lipid anchor or

B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof;

and

b) determining the amount of product produced per cell labeled with said product.

Claim 376 (previously presented) : The method of claim 266 wherein the label moiety is an antibody specific for the product.

Claim 377 (previously presented) : The method of claim 376 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 378 (previously presented) : The method of claim 376 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 267 (previously presented) : A method to determine the amount of product produced per cell in a population of cells, comprising the steps of:

- a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin; and
- b) determining the amount of product produced per cell labeled with said product.

Claim 379 (previously presented) : The method of claim 267 wherein the label moiety is an antibody specific for the product.

Claim 380 (previously presented) : The method of claim 379 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 381 (previously presented) : The method of claim 379 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 268 (previously presented) : A method to determine the amount of product produced per cell in a population of cells, comprising the steps of:

- a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell; and
- b) determining the amount of product produced per cell labeled with said product.

Claim 382 (previously presented) : The method of claim 268 wherein the label moiety is an antibody specific for the product.

Claim 383 (previously presented) : The method of claim 382 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 384 (previously presented) : The method of claim 382 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 260 (previously presented) : A method to determine the amount of cells labeled with a product in a population of cells, wherein the cells are labeled with the product secrete said product, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein

i) said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

ii) said capture moiety is coupled to said cells through an anchoring moiety, and

A) the anchoring moiety is a lipid anchor or

B) the anchoring moiety is an antibody, or an antigen-binding fragment thereof;

and

b) determining the amount of cells labeled with said product; and  
wherein said cells are not lysed by said method.

Claim 358 (previously presented) : The method of claim 260 wherein the label moiety is an antibody specific for the product.

Claim 359 (previously presented) : The method of claim 358 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 360 (previously presented) : The method of claim 358 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 261 (previously presented) : A method to determine the amount of cells labeled with a product in a population of cells, wherein the cells are labeled with the product secrete said product, comprising the steps of:

a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin; and

b) determining the amount of cells labeled with said product; and  
wherein said cells are not lysed by said method.

Claim 361 (previously presented) : The method of claim 261 wherein the label moiety is an antibody specific for the product.

Claim 362 (previously presented) : The method of claim 361 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 363 (previously presented) : The method of claim 361 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 262 (previously presented) : A method to determine the amount of cells labeled with a product in a population of cells, wherein the cells are labeled with the product secrete said product, comprising the steps of:

- a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product, wherein said capture moiety is antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell; and
  - b) determining the amount of cells labeled with said product; and
- wherein said cells are not lysed by said method.

Claim 364 (previously presented) : The method of claim 262 wherein the label moiety is an antibody specific for the product.

Claim 365 (previously presented) : The method of claim 364 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 366 (previously presented) : The method of claim 364 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 189 (previously presented) : A method to determine the amount of product produced per cell in a population of cells, comprising the steps of:

- a) culturing a cell population, wherein said cells of said population are coupled to a capture moiety which specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product; and
- b) determining the amount of product produced per cell labeled with said product.

Claim 291 (previously presented) : The method of claim 189 wherein the capture moiety is an antibody or antigen-binding fragment thereof.

Claim 292 (previously presented) : The method of claim 291 wherein the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 293 (previously presented) : The method of claim 189 wherein said capture moiety is coupled to said cells through an anchoring moiety, and the anchoring moiety is a lipid anchor.

Claim 294 (previously presented) : The method of claim 189 wherein said capture moiety is coupled to said cells through an anchoring moiety, and the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 313 (previously presented) : The method of claim 189 wherein the label moiety is an antibody specific for the product.

Claim 314 (previously presented) : The method of claim 313 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 315 (previously presented) : The method of claim 313 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 168 (currently amended) : A method to determine the amount of cells labeled with a product in a population of cells, wherein the cells are labeled with the product secrete said product, comprising the steps of:

- a) culturing a cell population, wherein ~~said~~ cells of said population are coupled to a capture moiety ~~which~~ that specifically binds a product secreted by said cells, under conditions wherein the product is secreted and bound to said capture moiety thereby producing cells labeled with said product; and
- b) determining the amount of cells labeled with said product; and
- wherein said cells are not lysed by said method.

Claim 169 (previously presented) : The method of claim 168 further comprising the step of determining the amount and type of product produced per cell labeled with said product.

- Claim 170 (previously presented) : The method of claim 168 further comprising the steps of:
- c) labeling the cells of claim 168 with a second capture moiety which specifically binds a second protein;
  - d) culturing said cells under conditions wherein a second product is secreted and bound to said second capture moiety thereby producing cells labeled with said second product; and
  - e) determining the amount of cells labeled with each said second product.

Claim 171 (previously presented) : The method of claim 170 further comprising the step of determining the amount and type of each product produced per cell labeled with product.

Claim 244 (previously presented) : The method of claim 170 further comprising the steps of, labeling the cells of claim 170 with at least one additional capture moiety which specifically binds an additional product; culturing said cells under conditions wherein said additional product is secreted and bound to said additional capture moiety thereby producing cells labeled with said additional product; and determining the amount of cells labeled with each product.

Claim 286 (previously presented) : The method of claim 168 wherein the capture moiety is an antibody or antigen binding fragment thereof.

Claim 287 (previously presented) : The method of claim 286 wherein the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 288 (previously presented) : The method of claim 168 wherein said capture moiety is coupled to said cells through an anchoring moiety, and said anchoring moiety is a lipid anchor.

Claim 289 (previously presented) : The method of claim 168 wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein said anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 307 (previously presented) : The method of claim 168 wherein the label moiety is an antibody specific for the product.

Claim 308 (previously presented) : The method of claim 307 wherein label moiety is labeled either directly or indirectly with a fluorophore.

Claim 309 (previously presented) : The method of claim 307 wherein label moiety is labeled either directly or indirectly with a magnetic particle.

Claim 212 (currently amended) : ~~The composition of claim 210~~ A composition comprising cells labeled with a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein optionally, said product is labeled with a label moiety, wherein said capture moiety is an antibody or antigen-binding fragment thereof.

Claim 213 (previously presented) : The composition of claim 212 wherein said antibody is bispecific.



Claim 217 (currently amended) : The composition according to claim ~~210~~ 212 wherein the label moiety is fluorochromated.

Claim 220 (currently amended) : The composition of claim ~~219~~ 212 wherein said cytokine includes IFN $\gamma$ , IL1, IL2, IL4, IL10, IL12, TGF $\beta$ , TNF, GMCSF, and SCF.

Claim 402 (currently amended) : ~~The composition of claim 399~~ A composition comprising viable cells labeled with a product secreted by said cells,

wherein said cells are coupled to a capture moiety, said product secreted by said cells is bound to said capture moiety, and

said product is labeled with a label moiety wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 417 (previously presented) : The composition of claim 402 wherein the product is a cytokine.

Claim 420 (currently amended) : ~~The composition of claim 405 wherein the product is a~~ A composition comprising viable cells, wherein said cells are coupled to a capture moiety, wherein a cytokine secreted by said cells is specifically bound to said capture moiety, and wherein said cytokine is labeled with a label moiety that permits the labeled cells to be positively selected based on the presence of said label moiety wherein said capture moiety is:

a) coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

b) coupled to said cells through an anchoring moiety, and

i) the anchoring moiety is a lipid anchor or

ii) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 408 (currently amended) : The composition of claim ~~405~~ 420 wherein said capture moiety is an antibody or antigen-binding fragment thereof and the label moiety is an antibody or antibody fragment specific for the product.

Claim 412 (previously presented) : The composition of claim 408 wherein the label moiety is an antibody specific for the product, and the label moiety is labeled either directly or indirectly with a fluorophore, radioactive isotope, chromophore or magnetic particles.

Claim 423 (previously presented) : The composition of claim 408 wherein the product is a cytokine.

Claim 427 (previously presented) : The composition of claim 412 wherein the product is a cytokine.

Claim 97 (currently amended) : ~~The composition of claim 95~~ A composition comprising cells positively identified based on a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein said product is labeled with a label moiety, wherein said capture moiety is an antibody or antigen-binding fragment thereof.

Claim 98 (previously presented) : The composition of claim 97 wherein said antibody is bispecific.

Claim 100 (currently amended) : The composition of claim 96 97 wherein said capture moiety is coupled to said cells through an anchoring moiety and said anchoring moiety is an antibody or an antigen-binding fragment thereof.

Claim 102 (previously presented) : ~~The composition according to claim 95~~ A composition comprising cells positively identified based on a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein said product is labeled with a label moiety, wherein the label moiety is fluorochromated.

Claim 419 (currently amended) : ~~The composition of claim 404 wherein the product is a~~ A composition comprising viable cells, wherein said cells are coupled to a capture moiety, wherein a cytokine secreted by said cells is specifically bound to said capture moiety, and wherein said cytokine is labeled with a label moiety that permits the labeled cells to be positively selected based on the presence of said label moiety.

Claim 407 (currently amended) : The composition of claim 404 419 wherein said capture moiety is an antibody or antigen-binding fragment thereof and the label moiety is an antibody or antibody fragment specific for the product.

Claim 410 ( currently amended) : The composition of claim 404 419 wherein said capture moiety is an antibody or antigen binding fragment thereof, the antibody or antigen binding fragment thereof is bispecific, and the coupling is through specific binding of the antibody or antigen binding fragment thereof to the cell.

Claim 411 (previously presented) : The composition of claim 407 wherein the label moiety is an antibody specific for the product, and the label moiety is labeled either directly or indirectly with a fluorophore, radioactive isotope, chromophore or magnetic particles.

Claim 426 (previously presented) : The composition of claim 411 wherein the product is a cytokine.

Claim 422 (previously presented) : The composition of claim 407 wherein the product is a cytokine.

Claim 425 (previously presented) : The composition of claim 410 wherein the product is a cytokine.

Claim 414 (currently amended) : ~~The composition of claim 399 wherein the product is a~~ A composition comprising viable cells labeled with a cytokine secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said cytokine secreted by said cells is bound to said capture moiety, and wherein said cytokine is labeled with a label moiety.

Claim 105 (previously presented) : ~~The composition of claim 104~~ A composition comprising cells positively identified based on a product cytokine secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product cytokine secreted by said cells is bound to said capture moiety, and wherein said product cytokine is labeled with a label moiety, and wherein said cytokine includes IFN $\gamma$ , IL1, IL2, IL4, IL10, IL12, TGF $\beta$ , TNF, GMCSF, and SCF.

Claim 401 (currently amended) : ~~The composition of claim 399~~ A composition comprising viable cells labeled with a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein said product is labeled with a label moiety, wherein said capture moiety is:

- a) coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety; or
- b) coupled to said cells through an anchoring moiety, and
  - i) the anchoring moiety is a lipid anchor or
  - ii) the anchoring moiety is an antibody, or an antigen-binding fragment thereof; or
- c) coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 403 (currently amended) : The composition of claim ~~400~~ 401 wherein said capture moiety is an antibody or antigen-binding fragment thereof and the label moiety is an antibody or antibody fragment specific for the product.

Claim 416 (previously presented) : The composition of claim 401 wherein the product is a cytokine.

Claim 215 (currently amended) : ~~The composition of claim 211~~ A composition comprising cells labeled with a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein optionally, said product is labeled with a

label moiety wherein said capture moiety is coupled to said cells through an anchoring moiety wherein said anchoring moiety is an antibody or an antigen-binding fragment thereof.

Claim 415 (currently amended) : ~~The composition of claim 400 wherein the product is a~~ A composition comprising viable cells labeled with a cytokine secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said cytokine secreted by said cells is bound to said capture moiety, and wherein said cytokine is labeled with a label moiety, and wherein said capture moiety is:

a) coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety or

b) coupled to said cells through an anchoring moiety, and

i) the anchoring moiety is a lipid anchor or

ii) the anchoring moiety is an antibody, or an antigen-binding fragment thereof.

Claim 406 (currently amended) : ~~The composition of claim 404~~ A composition comprising viable cells, wherein said cells are coupled to a capture moiety, wherein a product secreted by said cells is specifically bound to said capture moiety, and wherein said product is labeled with a label moiety that permits the labeled cells to be positively selected based on the presence of said label moiety wherein said capture moiety is coupled to said cells through an anchoring moiety, and wherein the anchoring moiety is a lectin.

Claim 409 (previously presented) : The composition of claim 406 wherein said capture moiety is an antibody or antigen-binding fragment thereof and the label moiety is an antibody or antibody fragment specific for the product.

Claim 413 (previously presented) : The composition of claim 409 wherein the label moiety is an antibody specific for the product, and the label moiety is labeled either directly or indirectly with a fluorophore, radioactive isotope, chromophore or magnetic particles.

Claim 418 (previously presented) : The composition of claim 403 wherein the product is a cytokine.

Claim 421 (previously presented) : The composition of claim 406 wherein the product is a cytokine.

Claim 424 (previously presented) : The composition of claim 409 wherein the product is a cytokine.

Claim 428 (previously presented) : The composition of claim 413 wherein the product is a cytokine.

Claim 225 (currently amended) : A The composition of claim 224 comprising cells labeled with a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein optionally, said product is labeled with a label moiety wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety wherein said linking moiety includes comprises a branched polymer polymers.

Claim 226 (currently amended) : The composition of claim 225 wherein said branched polymers polymer comprises a ~~includes~~ modified dextran ~~molecule molecules~~, polyethylene glycol, polypropylene glycol, polyvinyl alcohol or polyvinylpyrrolidone.

Claim 110 (currently amended) : ~~The composition of claim 109~~ A composition comprising cells positively identified based on a product secreted by said cells, wherein said cells are coupled to a capture moiety, wherein said product secreted by said cells is bound to said capture moiety, and wherein said product is labeled with a label moiety, wherein said capture moiety is coupled to said cells through direct chemical coupling of the capture moiety to components on the cell surface, optionally through a linking moiety wherein said linking moiety includes a branched polymer polymers.

Claim 111 (previously presented) : The composition of claim 110 wherein said branched polymer is a polymers ~~includes~~ modified dextran molecules, polyethylene glycol, polypropylene glycol, polyvinyl alcohol or polyvinylpyrrolidone.